

The Taxonomic Status of Two North American *Lithurge* (Hymenoptera: Megachilidae)

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Abstract.—Subsequent to my 1983 review of the North American species of *Lithurge*, the type specimen of *L. planifrons* (Friese) has been examined: it is a senior synonym of *L. socorroensis* (Mitchell) (NEW SYNONYMY). The species that I incorrectly believed to be *L. planifrons* is here described as *L. bitorulosa*, no prior name being available. A corrected key to the North American species is included.

In 1983 I reviewed the North American species of the bee genus *Lithurge*. Including one introduced Palearctic species, a total of eight species were recognized. A few Mexican specimens from Jalisco were tentatively identified as *L. planifrons* (Friese), a species otherwise known only from the inadequately described male type. That type, in the collections of the Zoologisches Museum, Humboldt-Universität, Berlin, has been examined at my request by T. L. Griswold. With the aid of Griswold's notes I have been able to determine that the specimens I had referred to this name were incorrectly identified, and that Friese's name is a senior synonym of *L. socorroensis* (Mitchell). Since no prior name is available for the species that I had called *L. planifrons* it is here named and described as *L. bitorulosa*.

A new key is given to reflect these changes. And, the opportunity is taken to improve the separation of females of *L. echinocacti* and *L. planifrons* (*L. socorroensis* in my previous key).

Lithurge (Lithurgopsis) planifrons (Friese)

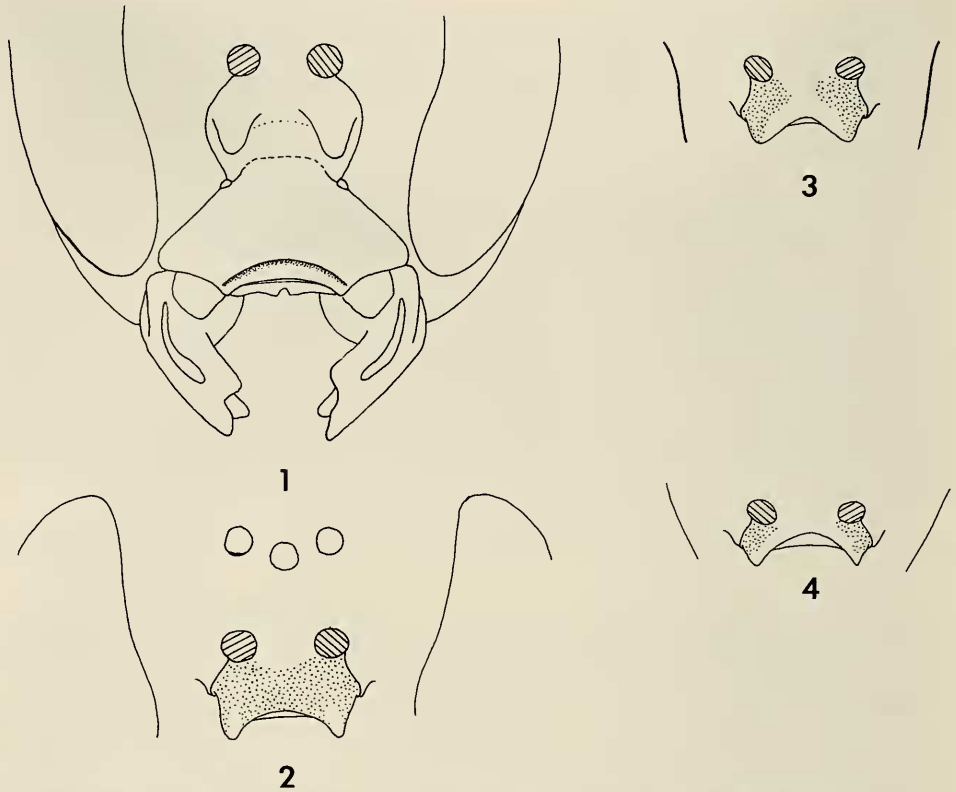
Lithurgus planifrons Friese, 1908:62. ♂.

Lithurgus socorroensis Mitchell, 1938:152-154. ♀. NEW SYNONYMY.

Lithurge (Lithurgopsis) socorroensis: Snelling, 1983:3, 10. ♀.

The type of *L. planifrons* is in the Berlin Museum and was examined in 1984 by Griswold. His notes on the type make it clear that the male type is not different from males of *L. socorroensis*. It is also clear that the specimens from Jalisco that I (1983) recorded as *L. planifrons* are not that species, but represent one previously undescribed.

The type locality of *L. planifrons* is given as "Jacubaya, Mexico," a misprint for Tacabaya, a suburb of Mexico City. As the name implies, *L. socorroensis* was based on material from Socorro Island in the Revillagigedo Archipelago. The range of *L. planifrons* extends from southern Arizona to Costa Rica.



Figs. 1-4. *Lithurge* spp., females: 1, *L. bitorulosa*, frontal view of lower face; 2, *L. bitorulosa*, dorsal view of supraclypeal prominence; 3, *L. planifrons*, same; 4, *L. echinocacti*, same. Stippling indicates extent of punctate areas in Figures 2-4. All Figures drawn to same scale.

Lithurge (Lithurgopsis) bitorulosa, new species

Figs. 1-2

Lithurge (Lithurgopsis) planifrons: Snelling, 1983:2, 10. ♂. [Misidentification].

Diagnosis.—Female: First flagellar segment shorter than second; supraclypeal area with large conical protuberance on each side; malar area linear, without posterior pit; upper facet of supraclypeal process conspicuously contiguously to subcontiguously punctate. Male: Tarsal arolia absent; labrum with transverse basal ridge, but without erect spine-like tubercle; supraclypeal area flat, shiny to slightly shiny between contiguous to subcontiguous punctures.

Description.—Female, Measurements (holotype in parentheses): head width 3.54-4.51 (4.51); head length 2.36-2.87 (2.87); wing length 7.5-10.0 (10.0); total length 11.5-15.5 (15.5) mm.

Head: 1.3-1.4 times broader than long; eyes strongly convergent below, upper interocular distance 1.5-1.6 times lower interocular distance. Malar space essentially absent, posterior pit absent. Transverse basal ridge of labrum high in center, with deep median excision. Clypeus with narrow, curved preapical ridge, distad of which clypeus is depressed, shiny; clypeal disc shiny, subpolished between coarse very variably spaced punctures, but with interspaces up to three times

puncture diameter in middle. Supraclypeal area moderately protuberant, with prominent blunt, conical protuberance on each side; lower facet polished and virtually impunctate, upper facet (including area between bases of protuberances) dull to moderately shiny between contiguous to subcontiguous, moderate to coarse punctures that are continuous across midline. Ocellocular distance about 1.3 times interocellar distance. First flagellar segment shorter than pedicel, about as long as second segment; median flagellar segments about one-third broader than long.

Mesosoma: Dorsal portion of mesoscutum coarsely, transversely scabrous anteriorly, becoming more finely, less distinctly transversely scabrous distad. Disc of scutellum finely scabrous.

Pilosity: Hairs mostly whitish; ferruginous hairs present on lower margin of mandible, middle one-third of apical margin of clypeus, and inner side of probasitarsi; meso- and metabasitarsi with brownish hairs on inner side. Sternal scopa somewhat brownish yellow. Marginal pubescent fasciae of metasomal terga 2 and 3 broadly interrupted, those of 4 and 5 complete; tergum 6 wholly covered with dark brownish hairs, the apices of which may be lighter reddish brown; tergal disc with sparse, suberect to erect, simple, brown hairs.

Color: Uniformly blackish brown, but legs (especially femora) lighter, flagellum ferruginous. Wings transparent, weakly brownish.

Male, Measurements: head width 3.64–3.79; head length 2.97–3.08; wing length 7.5–9.0; total length 11.0–13.0 mm.

Head: 1.2–1.3 times broader than long; eyes strongly convergent below, upper interocular distance 1.5–1.6 times lower interocular distance. Labrum with low, rounded basal ridge impressed in middle, but without erect spine. Supraclypeal area mostly flat, but lower portion sloping toward base of clypeus, 1.4–1.5 wider than long; clypeus, supraclypeal area slightly shiny between contiguous to subcontiguous, moderate to coarse punctures, without impunctate median areas. Ocellocular distance about 1.3 times interocellar distance; ocelloccipital distance about 1.3 times interocellar distance. First flagellar segment conspicuously broader than long, shorter than pedicel and about one-third as long as second segment.

Mesosoma: Mesoscutum with moderate, contiguous punctures, sometimes subrugosopunctate. Scutellum with moderate, contiguous punctures.

Pilosity: Similar to that of female, but without ferruginous hairs on mandible and clypeal margins, with yellowish ferruginous hairs on inner side of basitarsi; some brown hairs across occiput and on mesoscutum; metasomal terga 4–6 with continuous distal fasciae, brown hairs of tergal discs longer, last tergum with hairs sparse, some pale hairs at sides.

Color: As described for female, but legs definitely brown.

Type material.—Holotype female, allotype, five female paratypes: 46 mi W Tehuantepec, 2125 ft elev., Oaxaca, MEXICO, 26 June 1961 (University of Kansas Mexican Expedition), on cactus, *Opuntia*. Types in collection of University of Kansas, except one paratype in Natural History Museum of Los Angeles County.

Additional material (Not paratypes).—2 ♂, Estacion Biologia UNAM “Chamela,” San Patricio, Jalisco, MEXICO, 1981 (S. H. Bullock; #76); 1 ♂, same data except 21 June 1983 (#1533), in LACM and Estacion Biologia UNAM “Chamela.”

Etymology.—Combines the Latin prefix “bi-” (two) with the diminutive of *torus* (protuberance or bulge).

Discussion.—The female of *L. bitorulosa* will run to the last couplet in my 1983

key, separating *L. echinocacti* (Cockerell) and *L. planifrons* (as *L. socorroensis*). In all three of these species the supraclypeal area has a pair of sublateral conoid processes. The female of *L. echinocacti* has the supraclypeal area without defined upper and lower facets and with most of its area smooth and shiny between scattered fine punctures; only on the area adjacent to the antennal sockets do the punctures become crowded; the supraclypeal tubercles, in dorsal view, are narrow and acute and the entire supraclypeal area is less strongly protuberant (Fig. 4). The supraclypeal structure of *L. planifrons* more closely resembles that of *L. bitorulosa*, but the shiny, impunctate lower facet extends up and includes all of the area between the tubercles (Fig. 3), while in *L. bitorulosa* the lower facet is confined to the lower one-third of the supraclypeal area, with most of the area between the tubercles subcontiguously punctate (Fig. 2). In both *L. echinocacti* and *L. planifrons*, metasomal terga 2 and 3 possess apical hair bands that are complete across the middle of the segments.

The male, misidentified by me as *L. planifrons* in 1983, will run to that name in my key. Because the labrum lacks an erect spine-like process, the male is most like those of *L. echinocacti* and *L. apicalis*. It differs from both in having the supraclypeal area flat and coarsely and closely punctate along the midline.

The following is a revised version of my 1983 key, reflecting the changes made herein.

Key to North American *Lithurge*

- | | |
|--|--------------------------------|
| 1a. Female, metasoma with six exposed terga | 2 |
| b. Male, metasoma with seven exposed terga | 9 |
| 2a. First flagellar segment shorter than second; facial prominence, when present, not as below (subgenus <i>Lithurgopsis</i>) | 3 |
| b. First flagellar segment longer than second; facial prominence high, triangular in lateral view, its lower portion sloping toward base of clypeus (subgenus <i>Lithurge</i>) | <i>chrysurus</i> (Fonscolombe) |
| 3a. Supraclypeal protuberance nearly as broad as face, extending laterad of subantennal sutures; malar area distinct and with deep posterior pit .. | 4 |
| b. Supraclypeal protuberance, when present, much narrower than width of face, not extending laterad of subantennal sutures; malar area linear, mandible nearly contiguous with eye, posterior pit usually absent ... | 5 |
| 4a. Labral tubercle divided in middle only; clypeus with preapical ridge which is interrupted in middle | <i>apicalis</i> (Cresson) |
| b. Labral tubercle with median and sublateral impressions; clypeus without preapical ridge | <i>littoralis</i> (Cockerell) |
| 5a. Supraclypeal area distinctly elevated on each side of midline or with a single, transverse, bowed elevation | 6 |
| b. Supraclypeal area flat, with no protuberance, shiny and very sparsely punctate | <i>listrota</i> Snelling |
| 6a. Supraclypeal area with prominent paired, cone-like elevations; malar area without posterior pit | 7 |
| b. Supraclypeal elevation a high, transverse, bowed ridge; malar area with broad, shallow posterior pit | <i>gibbosa</i> (F. Smith) |
| 7a. Supraclypeal area very shiny and largely impunctate over one-half or | |

- more of its area (in particular, area between bases of lateral tubercles smooth and shiny); metasomal terga 2 and 3 with complete fasciae . . . 8
- b. Supraclypeal area mostly contiguously punctate, only narrow lower facet impunctate and shiny; metasomal terga 2 and 3 with apical fasciae broadly interrupted across middle *bitorulosa* new species
- 8a. In dorsal view, supraclypeal area only moderately elevated, and lateral tubercles narrow and acute (Fig. 4); ocelloccipital distance less than interocellar distance *echinocacti* (Cockerell)
- b. In dorsal view, supraclypeal area strongly elevated and lateral tubercles bluntly conoid (Fig. 3); ocelloccipital distance greater than interocellar distance *planifrons* (Friese)
- 9a. Tarsal arolia present; first flagellar segment shorter than second (subgenus *Lithurgopsis*) 10
- b. Tarsal arolia absent; first flagellar segment distinctly longer than second (subgenus *Lithurge*) *chrysurus* (Fonscolombe)
- 10a. Labrum with a single median tubercle, or none 11
- b. Labrum with a pair of slender, erect tubercles *littoralis* (Cockerell)
- 11a. Labrum with a low, transverse basal ridge or swelling 12
- b. Labrum with a slender, erect, spine-like process 14
- 12a. Supraclypeal area gently convex, its upper portion sloping toward antennal sockets, and with a definite median area that is less closely punctate than area near subantennal suture or entire supraclypeal area sparsely and irregularly punctate 13
- b. Supraclypeal area uniformly flat between clypeal base and antennal sockets, contiguously punctate, punctures coarse and subcontiguous along midline *bitorulosa* new species
- 13a. First flagellar segment, on shortest side, distinctly broader than long, shorter than pedicel; supraclypeal area about 1.4 times wider than long; legs usually reddish *echinocacti* (Cockerell)
- b. First flagellar segment, on shortest side, about as long as wide, about as long as pedicel; supraclypeal area about 1.8 times wider than long; legs brown *apicalis* (Cresson)
- 14a. Labrum with low, often obsolescent, ridge extending obliquely from basal corner to base of median tubercle 15
- b. Labrum deeply concave on either side of tubercle and with short, curved ridge from base of tubercle to midlength of lateral margin *planifrons* (Friese)
- 15a. Supraclypeal area slightly protuberant, densely punctate; ocelloccipital distance greater than interocellar distance *gibbosa* (F. Smith)
- b. Supraclypeal area flat, sparsely punctate, at least in middle; ocelloccipital distance less than interocellar distance *listrota* Snelling

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indebted to R. W. Brooks who had also examined the *L. planifrons* type and advised me that my earlier interpretation was incorrect.

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